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ABSTRACT

The development of a test to measure Locus of Control (IE) in preschool is described. The test is administered individually to a child, who is preferably alone. The set of 40 questions of which the test is comprised posit the occurrence of some reinforcement, and ask the child what the contingencies for the occurrence of the reinforcement are. The child's verbal free response reflects whether he attributes the reinforcement to his own behavior (an internal control response) or to other peoples' behavior or other events (external control responses). The test takes 15 to 20 minutes to administer. A .99 interrater reliability for scoring responses is obtained using a short set of scoring rules. (DB)

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Rationale, Method, and Validity of the SDRCI IE Measure for Preschool Children[1]

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While a good bit of work on IE has already been done with adults and older school age children, until now this variable has not been investigated among preschool and primary grade children. The findings of the Coleman Report (Coleman, 1966) with older children lead us to suspect that IE among young children might be of major importance, particularly for the development of compensatory early education programs.

Of course, the first problem we faced when we began our study was the absence of a suitable IE measure for use with young children. We needed such a measure to determine the ages at which IE expectancies begin forming and whether disadvantaged children begin developing relatively external control expectancies as early as Headstart age. We wanted to investigate the determinants of early IE and find what kinds of preschool experiences and programs contribute to particular expectancies. We were interested in the cultural and socio-economic factors affecting early IE development as well as the effect of IE on early cognitive development and socialization.

Our attempts at developing our own test soon taught us that an individually administered technique is essential with preschoolers. Furthermore, we found that we could not use the traditional sorts of yes-no or forced choice items which are used with older children. Preschoolers find choice type responses confusing and for the most part meaningless;

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[1] Paper read at American Psychological Association convention symposium, Developmental Aspects of Locus of Control Expectancies: New Methods and Prospects, Washington, 1971.

consequently they almost invariably form response sets and choose all last responses or all yes or no responses.

At this point we reexamined the basic theoretical model of IE in an attempt to generate a completely different measurement model. Jessor and Hammond (1957) point out that ideally a measure of a theoretical construct ought to correspond in form to the theoretical definition of that construct. We went back to Rotter's theoretical definition of IE as a higher order expectancy variable. We felt then that an IE measure should reflect, either through statements or behaviors, expectancies or subjective probabilities of a quantitative nature rather than a categorical yes-no or forced-choice sort. While one obviously cannot get quantified probability statements from a young child one can quantify the child's degree of association between reinforcing events and his own behavior. A free-response measure reflects a more straightforward index of a child's perceived relationship or subjective probability of relationship than does any kind of limited-response-choice measure. The set of questions we finally developed posit the occurrence of some reinforcement and ask the child what the contingencies for the occurrence of the reinforcement are. The child's verbal free response reflects whether he attributes the reinforcement to his own behavior (an internal control response) or to other peoples' behavior or other events (external control responses).

In choosing the reinforcers to use in the questions we had to consider such things as culture bias and socio-economic bias. Effective reinforcements with some groups of children are, of course, virtually meaningless to others. We concluded from our own experimenting and from the behavior modification literature that the primary reinforcers of approval and disapproval from parents, teachers, peers, and to some extent from self are the most useful and universally meaningful for this

age group. Cues of this approval or disapproval constitute the questions for our free response IE measure and can be expressed simply enough to draw good response protocols even from very underprivileged, relatively nonverbal children. We found that children do differ considerably in what they attribute as the cause of these reinforcements. While some children consistently cite their own behavior as a contingency, other children just as consistently cite other peoples' behavior or such things as the weather or God and the devil.

Our test is designed such that protocols lend themselves to quite detailed analysis. In addition to an overall IE score, our test, like the IAR, contains both positive and negative reinforcement items. For example, it asks both "What makes mothers happy?" and "What makes mothers unhappy?" We do find significant differences among preschoolers responses on this positive-negative dimension. We were interested in studying IE not just as a trait characteristic as suggested by Rotter's generalized expectancy definition, but also as a more situational type variable. Consequently, we additionally subscaled out test items according to what seemed to be the most universally powerful reinforcement agents for pre-school and primary grade children - those being self, other children, parents and teachers. Here again we find highly significant differences among young childrens' responses. While a child might give primarily internal responses to all teacher items, that same child might give almost all external responses to parent items. Different children give widely varied expectancy configurations along the reinforcement agent dimension. The reinforcement agent subscales can further be reliably ($r = .98$) broken down along such dimensions as academic achievement, aggression, socialization and so forth. This breakdown gives considerably

more quantitative information upon which to base interpretation of data. We find this particularly useful in isolating effects of specific teachers or specific programs. This is demonstrated by the case of two preschool classes which do not differ in overall IE scores, and have no apparent difference due to either positive or negative reinforcement or reinforcement agents; however, further investigation shows that a typical internal response to the item "What makes teachers happy?" from one class is "When I don't fight in school" (internal control aggression response) while a typical response to this item from the other class is "When I read well for the teacher" (internal control academic achievement response). This breakdown is of course extremely useful in a more clinical sense for interpretation of individual protocols (Delys & Stephens, 1971).

Originally the test was divided into two parallel forms of similar items. For example, where one form asked "What makes mothers happy?" the other form asked "What makes mothers smile?" We found .69 parallel form reliability and convergent validity between the two forms administering them to two Headstart classes two weeks apart. Convergent validity of the measure is further indicated by the similarity between our initial findings with early IE as it relates to sex, socio-economic status, and ethnic groups (Dr. Stephen's paper reports these data in more detail) and the findings of other investigators of IE among older children. We did a convergent validation study with Headstart children using a set of items consisting of the simplest items from the IAR, the Nowicki-Strickland test, and the Bialer test and found a correlation of only .29 with our measure. The low correlation in this study appears to be primarily due to the difficulty in using the yes-no and forced-choice

type items with preschoolers. We are now in the midst of analyzing a similar convergent validity study using our test and the Nowicki-Strickland test with a large population of second grade children. We expect a much higher correlation with this age group due to their improved ability to handle choice type responses.

The test is administered individually to a child, preferably away from the distraction of other children and adults - it is particularly difficult for a child to respond to teacher or parent items if the teacher or parents are present. The interviewer simply records verbatim the child's responses and probes for clarification where necessary. Occasionally a child begins a set of "I don't know" responses. This is usually quite easily broken up by repeating the question and encouraging the child to respond.

Actual administration of the full 40 items takes 15 to 20 minutes. Item analysis now in progress of a large sample will indicate the extent to which the test can be shortened for future use. The two issues of primary importance in administration are being sure the child fully understands the reinforcement cues (children occasionally do not discriminate between "happy" and "unhappy") and being sure the interviewer adequately understands and records the reinforcement contingency reported by the child (i.e., clarifies responses like "somebody" or "people"). Problems of children understanding reinforcement cues are easily handled by use of synonyms, facial expression and voice inflection. Stressing the importance of "Who does it" to interviewers and careful supervision of the first few interviews eliminates the problem of recording unscorable responses.

We obtain .99 interrater reliability for scoring responses using

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a short set of scoring rules. The primary criterion for scoring a response as "internal" is that the child cites himself or his own behavior or the behavior of a group (i.e., the class) which includes himself as the contingency for the reinforcement.

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